

IN THE CLAIMS:

Please amend the claims as follows:

Claim 1 (Currently Amended): A method of detecting a plate-shaped or sheet-shaped body with an optical sensor including a light emitting section and a light receiving section opposed to each other at a predetermined interval, comprising the steps of:

arranging a first optical sensor in parallel with one face of the plate-shaped or sheet-shaped body;

arranging a second optical sensor in parallel with the other face of the body and in parallel with the first optical sensor, thereby arranging the first optical sensor and the second sensor on opposite sides of the plate-shaped or sheet-shaped body;

turning on a first light emitting section of the first optical sensor and a second light emitting section of the second optical sensor alternately;

monitoring a first fluctuation of a detection level detected by a first light receiving section of the first optical sensor and a second fluctuation of a detection level detected by a second light receiving section of the second optical sensor; and

recognizing the body when one of the first and second fluctuations exceeds a predetermined value.

Claim 2 (Currently Amended): A detector for a plate-shaped or sheet-shaped body comprising:

a first optical sensor including a first light emitting section and a first light receiving section opposed to each other at a first interval, said first optical sensor arranged in parallel with one face of the plate-shaped or sheet-shaped body; and

a second optical sensor including a second light emitting section and a second light receiving section opposed to each other at a second interval, said second optical sensor arranged in parallel with the other face of the body and in parallel with said first optical sensor, thereby the first optical sensor and the second sensor being arranged on opposite sides of the plate-shaped or sheet-shaped body;

a first comparative circuit for comparing a first output level from the first light receiving section with a first judgment reference value and for outputting a first detection signal when the first output level is lower than the first judgment reference value;

a second comparative circuit for comparing a second output level from the second light receiving section with a second judgment reference value and for outputting a second detection signal when the second output level is lower than the second judgment reference value; and

a control section for alternately outputting a first drive signal to the first light emitting section and a second drive signal to the second light emitting section so that the first and second light emitting sections are alternately turned on and off, and for outputting a control signal when said control section receives one of the first and second detection signals.

Claim 3 (Currently Amended): A detector for a plate-shaped or sheet-shaped body comprising:

a first optical sensor including a first light emitting section and a first light receiving section opposed to each other at a first interval, said first optical sensor arranged in parallel with one face of the plate-shaped or sheet-shaped body;

a second optical sensor including a second light emitting section and a second light receiving section opposed to each other at a second interval, said second optical sensor arranged in parallel with the other face of the body and in parallel with said first optical sensor, thereby the first optical sensor and the second sensor being arranged on opposite sides of the plate-shaped or sheet-shaped body;

a control section for alternately switching on and off the first light emitting section and the second light emitting section, the control section outputting a first drive signal to the first light emitting section in a first time period, and outputting a second drive signal to the second light emitting section in a second time period;

a first monitoring circuit that monitors a first output level from the first light receiving section; and

a second monitoring circuit that monitors a second output level from the second light receiving section,

wherein the first and second optical sensors are disposed so that, during the first time period, light emitted by the first light emitting section is directly incident upon the first light receiving section and obliquely incident upon the second light receiving section under a no-load condition.

Claim 4 (Previously Presented): The detector for a plate-shaped or sheet-shaped body of claim 3, wherein the first and second optical sensors are disposed so that, during the second time period, light emitted by the second light emitting section is directly incident upon the second light receiving section and obliquely incident upon the first light receiving section under a no-load condition.

Claim 5 (Previously Presented): The detector for a plate-shaped or sheet-shaped body of claim 3, wherein the first monitoring circuit further comprises a first output level adjuster that adjusts the first output level to a first judgment reference value corresponding to the no-load condition.

Claim 6 (Previously Presented): The detector for a plate-shaped or sheet-shaped body of claim 5, wherein the first monitoring circuit further comprises a first comparative circuit that compares the first output level from the first light receiving section with the first judgment reference value and outputs a first detection signal when the first output level is lower than the first judgment reference value.

Claim 7 (Previously Presented): The detector for a plate-shaped or sheet-shaped body of claim 3, wherein the second monitoring circuit further comprises a second output level adjuster that adjusts the second output level to a second judgment reference value corresponding to the no-load condition.

Claim 8 (Previously Presented): The detector for a plate-shaped or sheet-shaped body of claim 7, wherein the second monitoring circuit further comprises a second comparative circuit that compares the second output level from the second light receiving section with the second judgment reference value and outputs a second detection signal when the second output level is lower than the second judgment reference value.

Claim 9 (Previously Presented): The method of detecting a plate-shaped or sheet-shaped body of claim 1, further comprising adjusting a first output level to a first judgment reference value corresponding to a no-load condition.

Claim 10 (Previously Presented): The detector for a plate-shaped or sheet-shaped body of claim 2, wherein the first judgment reference value corresponds to a no-load condition, and the first comparative circuit further comprises a first output level adjuster that adjusts the first output level to the first judgment reference value.

Claim 11 (New): A method of detecting a plate-shaped or sheet-shaped body with an optical sensor including a light emitting section and a light receiving section opposed to each other at a predetermined interval, comprising the steps of:

arranging a first optical sensor, including a first light emitting section and a first light receiving section, in parallel with one face of the plate-shaped or sheet-shaped body;

arranging a second optical sensor, including a second light emitting section and a second light receiving section, in parallel with the other face of the body and in parallel with the first optical sensor, thereby arranging the first optical sensor and the second sensor on opposite sides of the plate-shaped or sheet-shaped body, and thereby the first light emitting section and the first light receiving section are arranged on one side of the plate-shaped or sheet-shaped body and the second light emitting section and the second light receiving section are arranged on the other side of the plate-shaped or sheet-shaped body;

turning on a first light emitting section of the first optical sensor and a second light emitting section of the second optical sensor alternately;

monitoring a first fluctuation of a detection level detected by a first light receiving section of the first optical sensor and a second fluctuation of a detection level detected by a second light receiving section of the second optical sensor; and

recognizing the body when one of the first and second fluctuations exceeds a predetermined value.

Claim 12 (New): A detector for a plate-shaped or sheet-shaped body comprising:

a first optical sensor including a first light emitting section and a first light receiving section opposed to each other at a first interval, said first optical sensor arranged in parallel with one face of the plate-shaped or sheet-shaped body; and

a second optical sensor including a second light emitting section and a second light receiving section opposed to each other at a second interval, said second optical sensor arranged in parallel with the other face of the body and in parallel with said first optical sensor, thereby the first optical sensor and the second sensor being arranged on opposite sides of the plate-shaped or sheet-shaped body, and thereby the first light emitting section and the first light receiving section are arranged on one side of the plate-shaped or sheet-shaped body and the second light emitting section and the second light receiving section are arranged on the other side of the plate-shaped or sheet-shaped body;

a first comparative circuit for comparing a first output level from the first light receiving section with a first judgment reference value and for outputting a first detection signal when the first output level is lower than the first judgment reference value;

a second comparative circuit for comparing a second output level from the second light receiving section with a second judgment reference value and for outputting a second detection signal when the second output level is lower than the second judgment reference value; and

a control section for alternately outputting a first drive signal to the first light emitting section and a second drive signal to the second light emitting section so that the first and second light emitting sections are alternately turned on and off, and for outputting a control signal when said control section receives one of the first and second detection signals.

Claim 13 (New): A detector for a plate-shaped or sheet-shaped body comprising:

a first optical sensor including a first light emitting section and a first light receiving section opposed to each other at a first interval, said first optical sensor arranged in parallel with one face of the plate-shaped or sheet-shaped body;

a second optical sensor including a second light emitting section and a second light receiving section opposed to each other at a second interval, said second optical sensor arranged in parallel with the other face of the body and in parallel with said first optical sensor, thereby the first optical sensor and the second sensor being arranged on opposite sides of the plate-shaped or sheet-shaped body, and thereby the first light emitting section and the first light receiving section are arranged on one side of the plate-shaped or sheet-shaped body and the second light emitting section and the second light receiving section are arranged on the other side of the plate-shaped or sheet-shaped body;

a control section for alternately switching on and off the first light emitting section and the second light emitting section, the control section outputting a first drive signal to the first light emitting section in a first time period, and outputting a second drive signal to the second light emitting section in a second time period;

a first monitoring circuit that monitors a first output level from the first light receiving section; and

a second monitoring circuit that monitors a second output level from the second light receiving section,

wherein the first and second optical sensors are disposed so that, during the first time period, light emitted by the first light emitting section is directly incident upon the first light receiving section and obliquely incident upon the second light receiving section under a no-load

condition.